



Mac Mini Late 2014 Teardown

Mac Mini Late 2014 teardown on October 20, 2014.

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INTRODUCTION

It's been two years since the Mac Mini's last appearance on iFixit's teardown table, but a newly revised version joins Apple's lineup this week. Is this truly a refreshed Mini, or merely a mini-refresh? Stay tuned to find out just what two years of innovation has to say for itself—it's Mac Mini teardown time.

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[video: <https://www.youtube.com/watch?v=g7lk36W5oDo>]



TOOLS:

- [iFixit Opening Tools](#) (1)
 - [TR6 Torx Security Screwdriver](#) (1)
 - [T5 Torx Screwdriver](#) (1)
 - [T8 Torx Screwdriver](#) (1)
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Step 1 — Mac Mini Late 2014 Teardown

Mac Mini

Late 2014



TEARDOWN



- Apple's "affordable powerhouse" offers a range of hardware configurations (but no gold color option, so you can't configure for bling). Our unit's internals include:
 - 1.4 GHz Dual-Core Intel Core i5 (Turbo Boost up to 2.7 GHz) with 3 MB L3 cache
 - 4 GB of 1600 MHz LPDDR3 memory
 - 500 GB Hard Drive
 - Intel HD Graphics 5000
 - 802.11ac Wi-Fi + Bluetooth 4.0
 - OS X Yosemite

Step 2



- The backside of the Mini remains almost identical to the previous iteration. The only change is the omission of a FireWire port in favor of an extra Thunderbolt 2 port.
- ① The Mac Mini Late 2014 retains the model number identifier of A1347, but is distinguished by the EMC number 2840.

Step 3



- Gone are the [handy thumb indents and indicators](#). This Mini doesn't appear to have twist-off bottom cover!
- ⓘ We've got a [bad feeling about this](#).
- A flick of our ~~bottle opener~~ plastic opening tool pops this (lower) cap off.
- Well that was nice! But now we're greeted with something new: a solid door where there was once [handy access to the RAM and fan](#).
- We're starting to feel like the locks on our apartment changed and we weren't given the new keys...

Step 4



- Time to break down the door and see what's changed inside. The plastic bottom cover snaps onto three screws—three TR6 Torx Security screws. Really? Rude.
- This is the smallest Torx Security screw we've ever seen—our kits go down to T7 Security, so we asked our tool design team to get improvising.
- ⓘ Improvisation complete! Our packrat engineers produced a lone prototype T6 Torx Security screwdriver, a tool we originally abandoned because nobody had seen such a screw used in real life
- Thanks, Apple.
- ⓘ *We'll get this ridiculous driver in the store shortly.*

Step 5



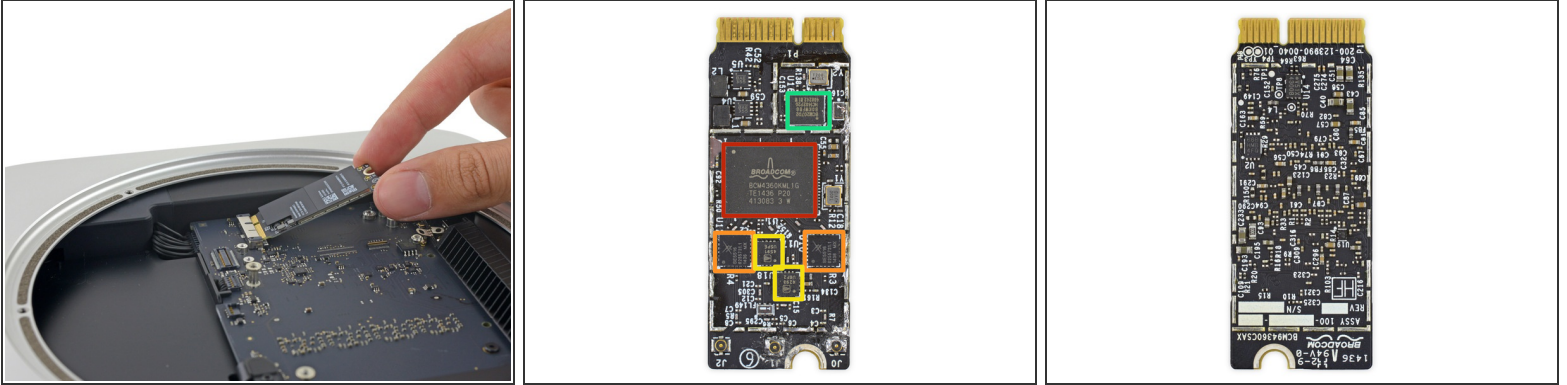
- After a bit of work—more than we were expecting—we're able to flip the Wi-Fi antenna/shield plate out of the way.
- Unfortunately, we're not home free yet. One end of the Wi-Fi antenna cable is clamped firmly to the plate, while the other end is screwed down onto the logic board.

Step 6



- Upon removal, the fan seems identical to the one from the previous model—but let's not be too quick to judge a fan by its cover.
- *Advanced Hydraulic Bearing*
- Hmm. Interesting. What exactly is Advanced Hydraulic Bearing? Let's find out. According to [Asia Vital Components](#):
 - AHB "consists of a polished steel shaft, a sintered bearing and fluid lubricant." In this system there "is no contact between shaft and bearing" and thus "the bearing load is carried solely by a film of fluid lubricant."
- ⓘ AHB is best for fans that operate at a lower speed. It's better at absorbing shock and dampening vibration than traditional ball bearings, making for a quieter fan.

Step 7



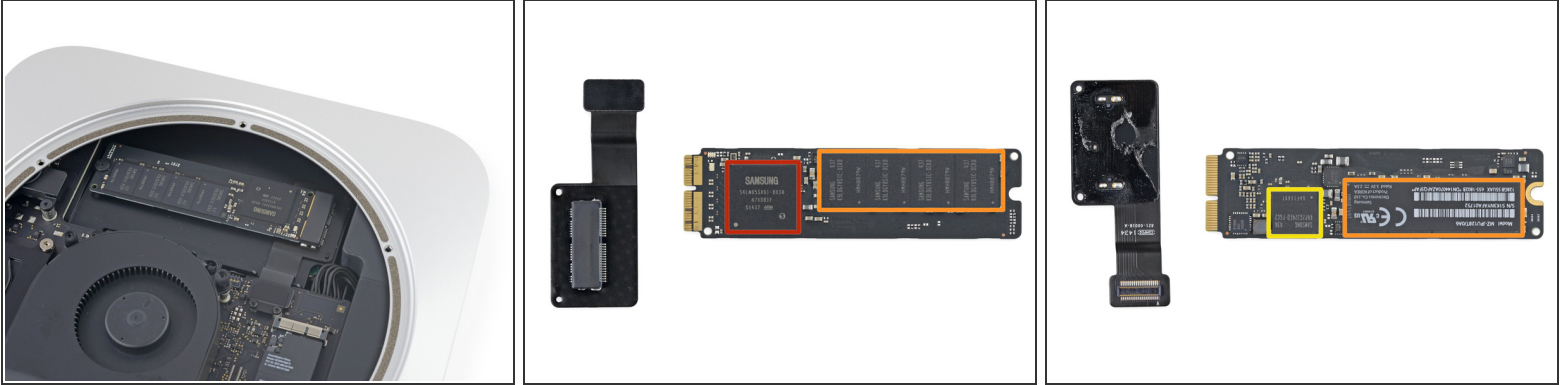
- The AirPort card is dispatched after removing one screw and disconnecting two more antennas from their sockets.
- ⓘ Gone is the funky [cable-connected AirPort card](#) of yesteryear, this AirPort card is now full-fledged PCIe, supporting Wi-Fi ac.
- Let's take a look at the ICs found on the AirPort card:
 - Broadcom [BCM4360KML1G](#) 5G WiFi 3-Stream 802.11ac Gigabit Transceiver
 - Skyworks [SE5516](#) Dual-Band 802.11a/b/g/n/ac WLAN Front-End Module
 - [RF Micro](#) RFFM4293 2.5 GHz FEMS and RFFM4591 5 GHz FEMS
 - Broadcom [BCM20702](#) Single-Chip Bluetooth 4.0 HCI Solution with Bluetooth Low Energy Support

Step 8



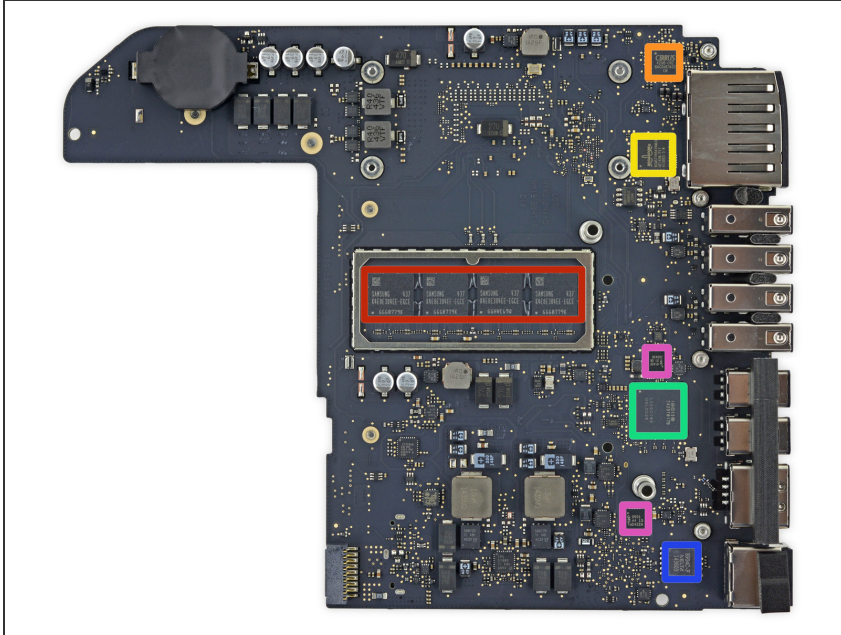
- Using our handy hand-powered [Mac Mini logic board removal tool](#), we handily remove our Mac Mini's handsome logic board.
 - While past Mac Minis have featured two SATA ports, allowing users to [upgrade their base model](#) with an extra hard drive, this year we only get one.
 - However, this empty socket over here may well be a spot for a PCIe cable, enabling the installation of a blade SSD.
- ⓘ More on this once we get our hands on a Fusion-equipped Mac Mini.

Step 9 — Update



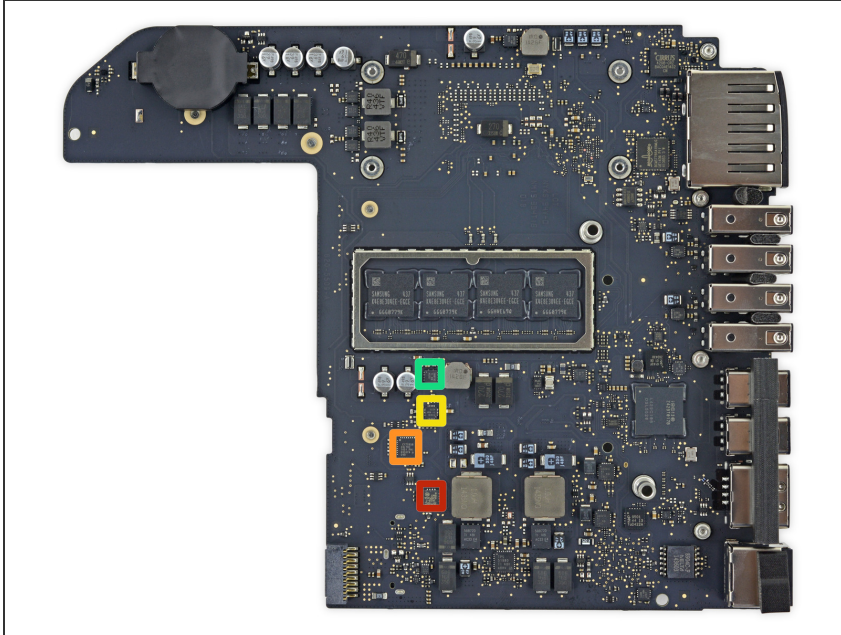
- True to our word, we cracked open a Fusion drive equipped Mac Mini, and it looks like our suspicions were accurate.
- The empty connector is now filled—by a PCIe cable, glued to the top of the hard drive tray.
- The SSD matches the one we found in the [MacBook Air 13" Mid 2013](#) with the same chips:
 - Samsung S4LN053X01-8030 (ARM) flash controller
 - 8 x [Samsung K9LDGY8SIC-XCK0](#) 16 GB flash storage
 - Samsung [K4P2G324ED](#) 512 MB RAM

Step 10



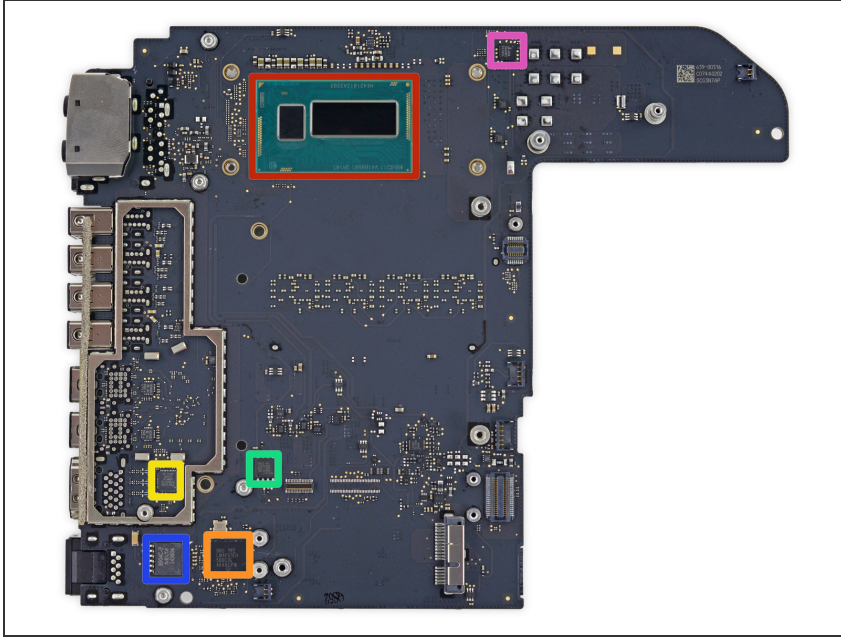
- Let's have a look at the ICs on the logic board:
 - Samsung K4E8E304EE-EGCE 8 Gb LPDDR3 DRAM (8 Gb x 4 = 32 Gb = 4 GB)
 - ⚠ Unfortunately, the RAM is **soldered** to the logic board. This means that if you want to upgrade the RAM, you can only do so at time of purchase.
 - Cirrus Logic 4208-CRZ Audio Codec (a returning champion from a bevy of recent Apple products including the [Mid 2013 MacBook Air](#) and [Mac Pro](#))
 - Broadcom [BCM57766A1KMLG](#) Ethernet PCIe Controller with SD3.0 Card Reader and ASF 2.0
 - Intel [DSL5520](#) Thunderbolt 2 Controller
 - Delta Electronics LFE8904C-F Discrete LAN Filter
 - NXP 6142F and NXP [PCA9501BS](#) 8-bit I/O Expander

Step 11



- The IC party continues:
 - Microchip Technology [1428-7420BE5A BMY](#) System Management Bus (SMBus) Temperature Sensor
 - Cypress Semiconductor [CY7C63833 LTXC](#) enCoRe II Low Speed USB Peripheral Controller
 - Texas Instruments [TPS51916](#) DDR3 Memory Power Solution Synchronous Buck Controller
 - Texas Instruments [58873D](#) Synchronous Buck NexFET Power Block MOSFET Pair

Step 12



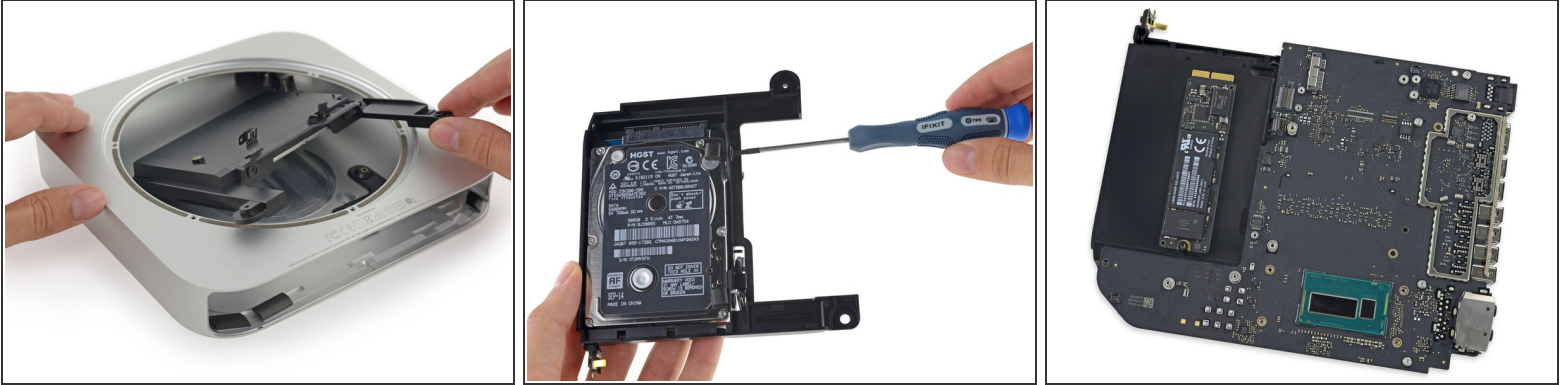
- The IC after-party:
 - Intel Core [i5-4260U](#) Processor with Intel HD Graphics 5000
 - Texas Instruments/Stellaris [LM4FS1EH](#) Microcontroller
 - Parade [PS8401A](#) HDMI Jitter Cleaning Repeater
 - Macronix [MX25L6406E](#) 64 Mb CMOS Serial Flash
 - Delta Electronics LFE8904C-F Discrete LAN Filter
 - Intersil 958 26AHRZ M419VL

Step 13



- We've got the power (supply) at the tips of our fingers. It's an easy extraction, even if it took a while to get here.
- We get a slight rush before we realize it is the [same as the 2012](#) model...which was the same as the [2011](#) edition.
- ① In the immortal words of Gertrude Stein, "This is the lesson that history teaches: *Repetition.*" (Put another way: Apple doesn't fall far from the tree.)

Step 14

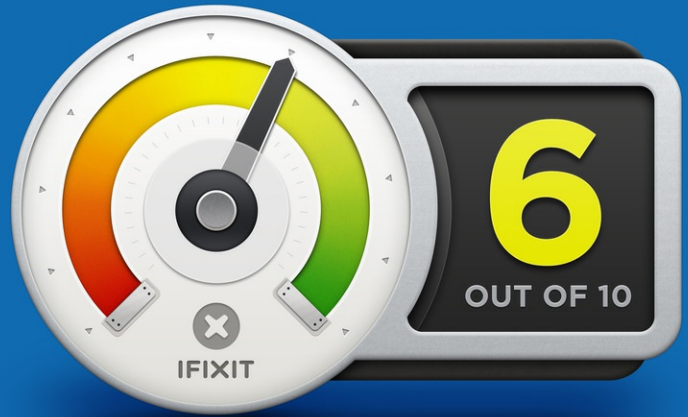


- Before we go, let's pull out the hard drive tray and take a look at the platter drive our Mini came loaded with.
- Tucked under the tray: a 500 GB, 5400 RPM HGST hard drive, coming in at 2.5" wide and 7 mm thin.
- And on the top of the tray, a promising mounting point for a blade-style PCIe SSD, presumably what we'll find in a Mac Mini equipped with Fusion Drive.
- ① To test just how promising, we dropped in the SSD from our [recently torn down 27" Retina 5K iMac](#) (and used its mounting screw). Looks like a nice fit!

Step 15



REPAIRABILITY SCORE:



- Mac Mini Late 2014 Repairability: **6 out of 10** (10 is easiest to repair).
- There's no glue anywhere inside that needs to be removed while disassembling the Mini.
- With the proper tools, disassembly is straight-forward and simple.
- T6 Torx Security screws are intended to lock you out of your Mini, and make it hard to clean the fan or replace the hard drive.
- The CPU is soldered to the logic board and not user-upgradeable.
- The RAM is now also soldered to the logic board, and not user-upgradeable.

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